

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RU 11-5	Wellbore No.	00
Wellbore Legal Name	RU 11-5	Common Wellbore Name	RU 11-5
Project	RU 05-07S-093W	Site	RU 23-5 Pad
Vertical Section Azimuth	270.77 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	1/16/2014	UWI	RU 11-5
Active datum	KB @7,627.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	1/16/2014	Ended	
Tool Name	MWD	Engineer	

2.1.1 Tie On Point

MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)
0.0	0.00	0.00	0.00	0.00	0.00

2.1.2 Survey Stations

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
1/16/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/16/2014	NORMAL	88.0	1.32	304.54	87.99	0.57	-0.83	0.84	1.50	1.50	0.00	304.54
	NORMAL	183.0	2.90	261.04	182.93	0.82	-4.11	4.12	2.26	1.66	-45.79	291.45
	NORMAL	268.0	6.33	267.54	267.64	0.28	-10.92	10.92	4.08	4.04	7.65	11.92
	NORMAL	360.0	9.85	265.96	358.71	-0.49	-23.84	23.83	3.83	3.83	-1.72	355.60
	NORMAL	452.0	12.67	269.56	448.93	-1.12	-41.78	41.76	3.16	3.07	3.91	15.77
	NORMAL	524.0	13.63	270.96	519.04	-1.04	-58.16	58.14	1.40	1.33	1.94	19.04
	NORMAL	616.0	15.12	269.90	608.16	-0.88	-81.00	80.98	1.64	1.62	-1.15	349.47
	NORMAL	708.0	17.06	271.04	696.55	-0.65	-106.49	106.47	2.14	2.11	1.24	9.80
	NORMAL	799.0	18.47	271.31	783.21	-0.08	-134.25	134.24	1.55	1.55	0.30	3.47
	NORMAL	891.0	17.99	272.17	870.60	0.79	-163.02	163.01	0.60	-0.52	0.93	151.14
	NORMAL	981.0	16.92	271.90	956.45	1.75	-190.00	190.00	1.19	-1.19	-0.30	184.20
	NORMAL	1,072.0	17.85	271.57	1,043.29	2.57	-217.17	217.19	1.03	1.02	-0.36	353.79
	NORMAL	1,103.0	18.20	271.04	1,072.77	2.79	-226.76	226.78	1.25	1.13	-1.71	334.64
1/18/2014	NORMAL	1,169.0	19.07	271.64	1,135.31	3.28	-247.85	247.87	1.35	1.32	0.91	12.71
	NORMAL	1,264.0	16.97	268.58	1,225.65	3.39	-277.22	277.24	2.42	-2.21	-3.22	202.82
	NORMAL	1,358.0	16.63	268.52	1,315.63	2.70	-304.38	304.39	0.36	-0.36	-0.06	182.89
	NORMAL	1,454.0	16.18	267.97	1,407.73	1.87	-331.48	331.48	0.50	-0.47	-0.57	198.78
	NORMAL	1,549.0	17.59	269.11	1,498.63	1.18	-359.07	359.05	1.52	1.48	1.20	13.76
	NORMAL	1,644.0	17.62	273.47	1,589.18	1.83	-387.77	387.76	1.39	0.03	4.59	90.78
	NORMAL	1,738.0	17.49	272.61	1,678.81	3.33	-416.08	416.09	0.31	-0.14	-0.91	242.97

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (')	Azl. (')	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (*/100usft)	Build Rate (*/100usft)	Turn (*/100usft)	Tface (')
1/18/2014	NORMAL	1,834.0	17.67	272.84	1,770.32	4.71	-445.05	445.07	0.20	0.19	0.24	21.21
	NORMAL	1,929.0	17.06	270.87	1,860.99	5.63	-473.38	473.41	0.89	-0.64	-2.07	223.01
	NORMAL	2,025.0	16.69	269.72	1,952.86	5.78	-501.25	501.28	0.52	-0.39	-1.20	221.51
	NORMAL	2,120.0	18.14	271.34	2,043.50	6.06	-529.67	529.71	1.61	1.53	1.71	19.26
	NORMAL	2,215.0	18.64	272.27	2,133.65	7.01	-559.63	559.67	0.61	0.53	0.98	30.85
	NORMAL	2,310.0	18.03	269.20	2,223.83	7.40	-589.50	589.55	1.20	-0.64	-3.23	236.27
	NORMAL	2,405.0	17.89	270.43	2,314.20	7.31	-618.79	618.83	0.43	-0.15	1.29	110.84
	NORMAL	2,501.0	17.68	271.41	2,405.61	7.78	-648.11	648.16	0.38	-0.22	1.02	125.52
	NORMAL	2,596.0	17.53	270.51	2,496.16	8.26	-676.84	676.89	0.33	-0.16	-0.95	240.71
	NORMAL	2,692.0	17.50	269.29	2,587.71	8.21	-705.73	705.77	0.38	-0.03	-1.27	264.75
	NORMAL	2,787.0	17.83	269.48	2,678.23	7.90	-734.55	734.59	0.35	0.35	0.20	10.00
	NORMAL	2,883.0	17.67	268.93	2,769.66	7.49	-763.82	763.85	0.24	-0.17	-0.57	226.08
	NORMAL	2,978.0	17.76	270.69	2,860.16	7.40	-792.72	792.75	0.57	0.09	1.85	81.30
	NORMAL	3,074.0	16.68	269.27	2,951.86	7.40	-821.14	821.16	1.21	-1.13	-1.48	200.59
	NORMAL	3,170.0	16.71	270.96	3,043.81	7.46	-848.71	848.74	0.51	0.03	1.76	87.27
	NORMAL	3,265.0	16.97	270.52	3,134.74	7.81	-876.23	876.26	0.30	0.27	-0.46	333.67
	NORMAL	3,360.0	17.23	271.66	3,225.54	8.34	-904.16	904.19	0.45	0.27	1.20	52.75
	NORMAL	3,455.0	16.88	273.33	3,316.36	9.55	-931.99	932.04	0.63	-0.37	1.76	126.35
	NORMAL	3,551.0	16.27	272.89	3,408.37	11.04	-959.34	959.40	0.65	-0.64	-0.46	191.42
	NORMAL	3,645.0	16.48	274.04	3,498.56	12.64	-985.79	985.87	0.41	0.22	1.22	57.62
NORMAL	3,739.0	17.43	273.79	3,588.47	14.51	-1,013.14	1,013.24	1.01	1.01	-0.27	355.49	
NORMAL	3,834.0	16.97	270.78	3,679.22	15.64	-1,041.20	1,041.32	1.05	-0.48	-3.17	241.24	
NORMAL	3,929.0	17.88	271.93	3,769.86	16.32	-1,069.64	1,069.76	1.02	0.96	1.21	21.28	
1/19/2014	NORMAL	4,023.0	17.78	273.26	3,859.35	17.63	-1,098.39	1,098.53	0.45	-0.11	1.41	104.43
	NORMAL	4,118.0	17.47	272.67	3,949.89	19.11	-1,127.11	1,127.27	0.38	-0.33	-0.62	209.67
	NORMAL	4,214.0	16.27	272.15	4,041.76	20.29	-1,154.95	1,155.12	1.26	-1.25	-0.54	186.92
	NORMAL	4,308.0	17.54	272.18	4,131.69	21.32	-1,182.26	1,182.44	1.35	1.35	0.03	0.41
	NORMAL	4,403.0	17.41	270.87	4,222.31	22.08	-1,210.78	1,210.97	0.44	-0.14	-1.38	251.09
	NORMAL	4,498.0	16.71	269.81	4,313.13	22.25	-1,238.65	1,238.83	0.81	-0.74	-1.12	203.45
	NORMAL	4,594.0	18.52	272.19	4,404.62	22.79	-1,267.69	1,267.88	2.03	1.89	2.48	22.84
	NORMAL	4,689.0	17.77	271.04	4,494.90	23.63	-1,297.26	1,297.46	0.87	-0.79	-1.21	204.98
	NORMAL	4,784.0	17.15	270.34	4,585.52	23.98	-1,325.76	1,325.96	0.69	-0.65	-0.74	198.38
	NORMAL	4,880.0	18.63	270.72	4,676.88	24.25	-1,355.25	1,355.45	1.55	1.54	0.40	4.69
	NORMAL	4,975.0	18.64	270.69	4,766.90	24.63	-1,385.60	1,385.81	0.01	0.01	-0.03	316.20
	NORMAL	5,070.0	18.15	270.42	4,857.04	24.92	-1,415.58	1,415.78	0.52	-0.52	-0.28	189.74
	NORMAL	5,166.0	18.04	272.61	4,948.30	25.70	-1,445.38	1,445.59	0.72	-0.11	2.28	100.23
	NORMAL	5,262.0	17.31	270.43	5,039.76	26.49	-1,474.51	1,474.73	1.03	-0.76	-2.27	221.16
	NORMAL	5,357.0	18.54	272.03	5,130.15	27.13	-1,503.74	1,503.97	1.39	1.29	1.68	22.58
	NORMAL	5,453.0	18.22	270.24	5,221.25	27.73	-1,534.00	1,534.23	0.68	-0.33	-1.86	239.60
	1/20/2014	NORMAL	5,548.0	18.29	270.08	5,311.47	27.82	-1,563.76	1,563.99	0.09	0.07	-0.17
NORMAL		5,643.0	18.09	271.82	5,401.73	28.31	-1,593.41	1,593.64	0.61	-0.21	1.83	111.04
NORMAL		5,738.0	18.20	270.16	5,492.00	28.82	-1,622.98	1,623.23	0.56	0.12	-1.75	281.22
NORMAL		5,834.0	16.99	272.13	5,583.51	29.38	-1,651.99	1,652.24	1.40	-1.26	2.05	154.73
NORMAL		5,930.0	15.99	275.03	5,675.56	31.06	-1,679.18	1,679.45	1.35	-1.04	3.02	141.92
NORMAL		6,025.0	15.45	274.82	5,767.01	33.27	-1,704.83	1,705.12	0.57	-0.57	-0.22	185.91
NORMAL		6,120.0	14.25	275.26	5,858.83	35.40	-1,729.08	1,729.40	1.27	-1.26	0.46	174.84
NORMAL		6,216.0	11.72	277.47	5,952.37	37.76	-1,750.52	1,750.87	2.69	-2.64	2.30	169.97
NORMAL		6,312.0	11.11	273.18	6,046.48	39.54	-1,769.42	1,769.79	1.09	-0.64	-4.47	232.21
NORMAL		6,408.0	10.73	273.77	6,140.74	40.64	-1,787.57	1,787.86	0.41	-0.40	0.61	163.90
1/21/2014	NORMAL	6,503.0	10.82	275.28	6,234.06	42.04	-1,805.28	1,805.68	0.31	0.09	1.57	72.83
	NORMAL	6,599.0	9.16	275.50	6,328.60	43.60	-1,821.86	1,822.28	1.73	-1.73	0.25	178.68
	NORMAL	6,695.0	8.71	271.57	6,423.44	44.53	-1,836.73	1,837.16	0.79	-0.47	-4.09	231.67
	NORMAL	6,790.0	6.58	266.24	6,517.59	44.37	-1,849.35	1,849.78	2.36	-2.24	-5.61	195.78
	NORMAL	6,885.0	6.69	265.16	6,611.95	43.54	-1,860.30	1,860.71	0.18	0.12	-1.14	310.86
	NORMAL	6,980.0	5.25	264.43	6,706.44	42.65	-1,870.14	1,870.54	1.52	-1.52	-0.77	182.66
	NORMAL	7,076.0	4.30	263.93	6,802.10	41.85	-1,878.09	1,878.48	0.99	-0.99	-0.52	182.26

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (")	Azi. (")	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS ("/100usft)	Build Rate ("/100usft)	Turn ("/100usft)	Tface (")
1/21/2014	NORMAL	7,172.0	3.34	265.77	6,897.89	41.26	-1,884.46	1,884.84	1.01	-1.00	1.92	173.64
1/22/2014	NORMAL	7,267.0	2.79	253.05	6,992.75	40.38	-1,889.43	1,889.80	0.92	-0.58	-13.39	224.80
	NORMAL	7,362.0	2.37	244.94	7,087.66	38.88	-1,893.42	1,893.77	0.58	-0.44	-8.54	216.99
	NORMAL	7,457.0	1.34	294.71	7,182.61	38.51	-1,896.21	1,896.55	1.92	-1.08	52.39	145.78
	NORMAL	7,553.0	0.87	292.44	7,278.59	39.26	-1,897.90	1,898.26	0.49	-0.49	-2.36	184.19
	NORMAL	7,648.0	0.97	341.35	7,373.58	40.29	-1,898.82	1,899.19	0.81	0.11	51.48	107.64
	NORMAL	7,744.0	0.75	285.88	7,469.57	41.23	-1,899.69	1,900.07	0.86	-0.23	-57.78	228.59
	NORMAL	7,839.0	0.48	282.48	7,564.57	41.49	-1,900.67	1,901.06	0.29	-0.28	-3.58	186.00
	NORMAL	7,933.0	0.60	326.23	7,658.56	41.99	-1,901.33	1,901.72	0.44	0.13	46.54	96.40
	NORMAL	8,029.0	0.88	281.06	7,754.56	42.54	-1,902.34	1,902.74	0.65	0.29	-47.05	271.87
	NORMAL	8,124.0	0.79	343.90	7,849.55	43.31	-1,903.23	1,903.64	0.92	-0.09	66.15	126.46
	NORMAL	8,220.0	0.86	26.27	7,945.54	44.61	-1,903.09	1,903.52	0.63	0.09	44.14	103.27
1/23/2014	NORMAL	8,315.0	0.97	33.56	8,040.53	45.93	-1,902.32	1,902.77	0.16	0.09	7.67	56.28
	NORMAL	8,411.0	0.97	22.66	8,136.51	47.36	-1,901.56	1,902.03	0.19	0.00	-11.35	264.55
	NORMAL	8,507.0	0.62	19.50	8,232.50	48.60	-1,901.07	1,901.56	0.37	-0.36	-3.29	185.56
	NORMAL	8,602.0	0.44	8.43	8,327.50	49.45	-1,900.85	1,901.34	0.22	-0.19	-11.65	204.18
	NORMAL	8,697.0	0.50	8.42	8,422.50	50.22	-1,900.73	1,901.24	0.06	0.06	-0.01	359.92
	NORMAL	8,792.0	0.35	181.75	8,517.49	50.34	-1,900.68	1,901.19	0.89	-0.16	182.45	177.25
	NORMAL	8,887.0	0.62	168.04	8,612.49	49.54	-1,900.59	1,901.08	0.31	0.28	-14.43	329.79
	NORMAL	8,982.0	0.85	162.92	8,707.48	48.37	-1,900.27	1,900.75	0.25	0.24	-5.39	341.49
	NORMAL	9,077.0	1.49	202.40	8,802.46	46.55	-1,900.54	1,900.99	1.05	0.67	41.56	72.42
	NORMAL	9,171.0	1.49	209.17	8,896.43	44.36	-1,901.60	1,902.02	0.19	0.00	7.20	93.38
	NORMAL	9,266.0	1.85	216.11	8,991.39	42.04	-1,903.10	1,903.50	0.43	0.38	7.31	32.83
	NORMAL	9,361.0	2.29	225.78	9,086.33	39.48	-1,905.37	1,905.72	0.59	0.46	10.18	43.34
1/24/2014	NORMAL	9,457.0	2.99	224.11	9,182.23	36.34	-1,908.48	1,908.80	0.73	0.73	-1.74	352.89
	NORMAL	9,552.0	3.51	223.23	9,277.07	32.44	-1,912.20	1,912.46	0.55	0.55	-0.93	354.08
	NORMAL	9,647.0	3.78	228.94	9,371.88	28.27	-1,916.55	1,916.76	0.48	0.28	6.01	56.23
	NORMAL	9,741.0	4.40	232.46	9,465.64	24.03	-1,921.75	1,921.90	0.71	0.66	3.74	23.81
	NORMAL	9,836.0	4.03	232.29	9,560.39	19.77	-1,927.28	1,927.37	0.39	-0.39	-0.18	181.85
1/25/2014	NORMAL	9,931.0	3.59	230.61	9,655.18	15.84	-1,932.22	1,932.26	0.48	-0.46	-1.77	193.40
	NORMAL	10,026.0	4.37	219.12	9,749.95	11.15	-1,936.80	1,936.78	1.17	0.82	-12.09	308.54
	NORMAL	10,121.0	4.92	217.87	9,844.64	5.12	-1,941.59	1,941.48	0.59	0.58	-1.32	348.95
	NORMAL	10,241.0	4.57	222.26	9,964.22	-2.48	-1,947.96	1,947.75	0.42	-0.29	3.66	136.12